







A-10

Talc, NTP TR 421

TABLE A2

Individual Animal Tumor Pathology of Male Rats in the Lifetime Inhalation Study of Talc: 0 mg/m<sup>3</sup> (continued)

Number of Days on Study	3 3 4 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 7 7 7 7 7 7
	3 6 2 5 6 8 9 9 2 2 3 3 5 5 7 8 8 9 0 0 0 0 2 3
	4 0 9 1 8 6 0 3 2 8 1 5 0 6 0 2 2 8 0 0 4 9 4 9
Carcass ID Number	3 3 3 3 4 2 2 3 3 4 3 3 3 4 3 3 3 3 3 3 3 3 2 4
	6 0 6 4 1 9 9 1 8 2 3 4 6 1 4 4 4 1 1 8 9 1 9 1
	1 0 8 0 3 4 5 8 7 0 9 2 3 8 5 3 8 7 6 5 0 3 6 4
	1 1
Nervous System	
Brain	+ +
Astrocytoma malignant	
Respiratory System	
Larynx	+ 1 +
Lung	+ +
Fibrosarcoma, metastatic, salivary glands	
Osteosarcoma, metastatic, multiple, bone	X
Nose	+ +
Chondroma	
Trachea	+ +
Special Senses System	
Eye	+ +
Urinary System	
Kidney	+ +
Renal tubule, carcinoma	
Urinary bladder	+ +
Papilloma	
Systemic Lesions	
Multiple organs	+ +
Leukemia mononuclear	X X
Lymphoma malignant lymphocytic	
Mesothelioma benign	X

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A-12

Talc, NTP TR 421

TABLE A2

Individual Animal Tumor Pathology of Male Rats in the Lifetime Inhalation Study of Talc: 6 mg/m<sup>3</sup>

Number of Days on Study	1	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7
	8	2	2	4	5	7	9	9	0	1	3	4	5	5	6	7	7	9	1	2	2	3	3	4	4	4
	6	7	9	4	8	3	3	3	4	1	3	8	0	7	3	3	7	0	5	2	8	4	9	0	1	1
Carcass ID Number	0	0	1	0	1	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	1
	0	2	0	5	0	0	4	0	7	1	7	2	6	3	5	0	0	5	0	1	8	9	8	5	2	2
	6	9	7	9	5	4	9	3	3	1	9	8	0	1	7	0	3	3	2	2	3	7	4	6	4	4
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Alimentary System</b>																										
Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Intestine large	+	+	+	A	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+
Intestine large, cecum	+	+	+	A	+	+	+	+	+	+	A	A	+	+	+	+	+	+	+	A	+	+	+	+	+	A
Intestine large, colon	+	+	+	A	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+
Intestine large, rectum	+	+	+	A	+	M	+	+	M	+	A	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+
Intestine small	+	+	+	A	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+
Intestine small, duodenum	+	+	+	A	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+
Intestine small, ileum	+	+	+	A	+	+	+	+	+	+	A	A	+	+	+	+	+	+	+	A	+	+	+	+	+	A
Intestine small, jejunum	+	+	+	A	+	+	+	+	+	+	A	A	+	+	+	+	+	+	+	A	+	+	+	+	+	A
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Neoplastic nodule, multiple																										
Hepatocyte, adenoma																										
Pancreas	+	+	+	A	+	+	+	+	+	+	A	A	+	+	+	+	+	+	+	A	+	+	+	+	+	+
Salivary glands	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Fibroma																										
Stomach	+	+	+	A	+	+	+	+	+	+	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Stomach, forestomach	+	+	+	A	+	+	+	+	+	+	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Stomach, glandular	+	+	+	A	+	+	+	+	+	+	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<b>Cardiovascular System</b>																										
Blood vessel									+																	+
Heart	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<b>Endocrine System</b>																										
Adrenal gland	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Adrenal gland, cortex	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Adrenal gland, medulla	+	+	+	+	+	+	+	+	+	+	A	+	+	I	+	+	+	+	+	+	+	+	+	+	+	+
Pheochromocytoma malignant				X																						
Pheochromocytoma complex				X																						
Pheochromocytoma benign				X							X				X	X			X							
Bilateral, pheochromocytoma benign						X		X											X		X		X			
Islets, pancreatic	+	+	+	A	+	+	+	+	+	+	A	A	+	+	+	M	+	+	+	A	+	+	M	+	+	+
Parathyroid gland	+	+	+	+	+	+	M	+	+	+	+	M	M	+	+	+	+	+	+	+	+	+	+	+	+	+
Adenoma																				X						
Pituitary gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Pars distalis, adenoma				X												X				X		X				
Pars distalis, carcinoma																										
Thyroid gland	+	+	+	A	+	+	+	+	+	+	A	A	+	+	+	A	+	+	+	+	+	+	+	+	+	+
C-cell, adenoma																										
C-cell, carcinoma																										

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A-14

Talc, NTP TR 421

TABLE A2

Individual Animal Tumor Pathology of Male Rats in the Lifetime Inhalation Study of Talc: 6 mg/m<sup>3</sup> (continued)

Number of Days on Study	1	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7
	8	2	2	4	5	7	9	9	0	1	3	4	5	5	6	7	7	9	1	2	2	3	3	4	4	4	4
	6	7	9	4	8	3	3	3	4	1	3	8	0	7	3	3	7	0	5	2	8	4	9	0	1		
Carcass ID Number	0	0	1	0	1	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	1	
	0	2	0	5	0	0	4	0	7	1	7	2	6	3	5	0	0	5	0	1	8	9	8	5	2		
	6	9	7	9	5	4	9	3	3	1	9	8	0	1	7	0	3	3	2	2	3	7	4	6	4		
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
General Body System																											
Tissue NOS																											
Pheochromocytoma malignant, metastatic, adrenal gland																											
Genital System																											
Epididymis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Preputial gland	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Adenoma																											
Carcinoma	X				X																				X	X	
Prostate	+	+	+	M	+	+	+	+	M	+	M	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	A
Seminal vesicle	+	+	+	M	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Testes	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Bilateral, interstitial cell, adenoma									X		X	X				X	X	X	X				X	X		X	
Interstitial cell, adenoma					X	X			X						X		X					X					
Hematopoietic System																											
Bone marrow	+	+	+	+	+	+	+	+	+	+	+	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lymph node	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lymph node, bronchial	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+
Lymph node, mandibular	+	+	+	+	+	+	+	+	+	+	+	I	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lymph node, mediastinal	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lymph node, mesenteric	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Spleen	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Fibrous histiocytoma																											
Thymus	+	+	+	M	+	+	+	+	+	+	+	M	+	+	+	+	M	+	+	+	+	+	+	+	I	+	+
Integumentary System																											
Mammary gland	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Skin	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Fibroma																											
Keratoacanthoma																											
Neurofibroma																											
Squamous cell carcinoma																											
Subcutaneous tissue, fibroma																											
Subcutaneous tissue, fibrosarcoma																											

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A-16

Talc, NTP TR 421

TABLE A2

Individual Animal Tumor Pathology of Male Rats in the Lifetime Inhalation Study of Talc: 6 mg/m<sup>3</sup> (continued)

Number of Days on Study	1 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 7 7 7 7 7 7 7
	8 2 2 4 5 7 9 9 0 1 3 4 5 5 6 7 7 9 1 2 2 3 3 4 4
	6 7 9 4 8 3 3 3 4 1 3 8 0 7 3 3 7 0 5 2 8 4 9 0 1
Carcass ID Number	0 0 1 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 1 0 0 0 0 0 1
	0 2 0 5 0 0 4 0 7 1 7 2 6 3 5 0 0 5 0 1 8 9 8 5 2
	6 9 7 9 5 4 9 3 3 1 9 8 0 1 7 0 3 3 2 2 3 7 4 6 4
	1 1
Musculoskeletal System	
Bone	+ +
Pelvis, osteosarcoma	X
Nervous System	
Brain	+ +
Respiratory System	
Larynx	+ +
Lung	+ +
Alveolar/bronchiolar adenoma	
Osteosarcoma, metastatic	X
Nose	+ + + + + + + + + + A + + + + + + + + + + + +
Sarcoma	X
Trachea	+ +
Special Senses System	
Eye	+
Urinary System	
Kidney	+ + + A + + + + + + + + + + + + + + + + + +
Urinary bladder	+ + + + + + + + + A + + + + + + + + + + + +
Systemic Lesions	
Multiple organs	+ +
Leukemia mononuclear	X X X X X X X X X X X X X X X X X X

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A-18

Talc, NTP TR 421

TABLE A2

Individual Animal Tumor Pathology of Male Rats in the Lifetime Inhalation Study of Talc: 18 mg/m<sup>3</sup>

	2	4	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7		
Number of Days on Study	4	9	0	9	0	0	1	1	1	1	2	3	4	5	5	5	7	8	9	9	0	0	1	2	3	
	8	2	0	4	7	9	4	5	5	7	8	4	5	1	1	3	6	3	7	8	1	5	9	2	7	
Carcass ID Number	2	1	2	1	2	1	1	1	2	2	1	2	2	2	2	2	2	1	1	2	1	2	1	1		
	1	4	0	7	4	7	7	4	2	6	9	1	5	0	2	6	7	2	7	5	2	5	5	5	7	
	9	5	3	7	4	4	5	9	4	6	5	7	1	2	7	7	0	6	6	2	5	1	2	0	2	
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Alimentary System																										
Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine large	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	
Intestine large, cecum	+	A	+	A	A	+	+	+	+	+	+	+	A	+	+	+	+	+	+	A	A	+	+	+	+	
Intestine large, colon	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine large, rectum	+	M	M	A	+	+	+	+	+	M	+	A	+	+	+	+	+	+	M	M	M	M	+	M	+	
Intestine small	+	+	+	A	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine small, duodenum	+	+	+	A	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	
Intestine small, ileum	M	A	A	A	+	+	+	+	M	+	+	+	A	+	+	+	+	+	+	A	A	A	+	+	+	
Intestine small, jejunum	+	A	A	A	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	A	A	+	+	+	+	
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Neoplastic nodule																										
Neoplastic nodule, multiple										X																
Mesentery																										
Pancreas	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Salivary glands	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Stomach	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Stomach, forestomach	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Fibrosarcoma				X																						
Stomach, glandular	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Fibrosarcoma				X																						
Tongue																										
Cardiovascular System																										
Blood vessel					+									+						+						
Heart	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Endocrine System																										
Adrenal gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Adrenal gland, cortex	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Adrenal gland, medulla	+	+	+	M	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Osteosarcoma, metastatic, uncertain																										
primary site																										
Pheochromocytoma malignant														X												
Pheochromocytoma complex																										
Pheochromocytoma benign														X	X	X	X	X		X	X					
Bilateral, pheochromocytoma malignant																										
Bilateral, pheochromocytoma benign																										
Islets, pancreatic	+	+	+	A	+	+	+	+	+	+	+	+	+	I	+	+	+	+	+	+	+	+	+	+	+	
Adenoma																										
Parathyroid gland	M	+	+	+	+	+	+	+	I	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Pituitary gland	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Pars distalis, adenoma																										
Pars intermedia, adenoma																										
Thyroid gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
C-cell, adenoma																										
Follicular cell, adenoma																										

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## Lesions in Male Rats

A-19

**TABLE A2**  
**Individual Animal Tumor Pathology of Male Rats in the Lifetime Inhalation Study of Talc: 18 mg/m<sup>3</sup> (continued)**

Number of Days on Study	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8
	4	7	8	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9	0	0	0	0	0	0	0	0	0
	3	8	3	8	1	1	3	4	8	9	9	9	9	9	9	9	9	9	0	0	0	0	0	0	0	0	0
Carcass ID Number	2	2	2	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2
	2	0	4	9	4	7	7	9	4	5	5	6	7	8	9	9	9	9	2	2	4	4	4	6	7	7	
	2	1	2	4	5	4	1	7	6	5	6	9	8	0	3	6	8	0	8	3	6	7	8	5	6		Total Tissues/ Tumors
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
<b>Alimentary System</b>																											
Esophagus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
Intestine large	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
Intestine large, cecum	A	A	+	+	A	+	A	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	37
Intestine large, colon	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	46
Intestine large, rectum	A	A	M	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	M	+	+	+	34
Intestine small	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	46
Intestine small, duodenum	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	46
Intestine small, ileum	A	A	+	+	+	A	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	A	35
Intestine small, jejunum	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	A	40
Liver	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
Neoplastic nodule																											1
Neoplastic nodule, multiple																									X		3
Mesentery																											1
Pancreas	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
Salivary glands	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
Stomach	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
Stomach, forestomach	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
Fibrosarcoma																											1
Stomach, glandular	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
Fibrosarcoma																											1
Tongue								+																			1
<b>Cardiovascular System</b>																											
Blood vessel				+														+									5
Heart	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	50
<b>Endocrine System</b>																											
Adrenal gland	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
Adrenal gland, cortex	A	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	48
Adrenal gland, medulla	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	47
Osteosarcoma, metastatic, uncertain																											
primary site																											1
Pheochromocytoma malignant			X	X											X		X	X									6
Pheochromocytoma complex	X																										1
Pheochromocytoma benign	X	X	X					X	X				X	X			X	X	X	X	X						20
Bilateral, pheochromocytoma malignant					X																						1
Bilateral, pheochromocytoma benign				X		X	X	X		X	X	X			X	X							X	X			16
Islets, pancreatic	A	A	+	+	+	+	+	+	+	M	M	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	43
Adenoma																								X			2
Parathyroid gland	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	46
Pituitary gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	49
Pars distalis, adenoma				X		X	X	X		X						X	X				X						10
Pars intermedia, adenoma																											2
Thyroid gland	A	A	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	46
C-cell, adenoma											X																3
Follicular cell, adenoma																									X		1

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**TABLE A2**  
**Individual Animal Tumor Pathology of Male Rats in the Lifetime Inhalation Study of Talc: 18 mg/m<sup>3</sup> (continued)**

	2	4	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7		
Number of Days on Study	4	9	0	9	0	0	1	1	1	1	2	3	4	5	5	5	7	8	9	9	0	0	1	2	3	
	8	2	0	4	7	9	4	5	5	7	8	4	5	1	1	3	6	3	7	8	1	5	9	2	7	
Carcass ID Number	2	1	2	1	2	1	1	1	2	2	1	2	2	2	2	2	2	1	1	2	1	2	1	1	1	
	1	4	0	7	4	7	7	4	2	6	9	1	5	0	2	6	7	2	7	5	2	5	5	5	7	
	9	5	3	7	4	4	5	9	4	6	5	7	1	2	7	7	0	6	6	2	5	1	2	0	2	
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
General Body System	None																									
Genital System																										
Epididymis	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Penis																										
Preputial gland	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	
Adenoma																										
Carcinoma												X														
Prostate	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Seminal vesicle	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	
Testes	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Bilateral, interstitial cell, adenoma												X				X	X	X			X	X	X	X	X	
Interstitial cell, adenoma							X	X			X	X	X				X						X			
Hematopoietic System																										
Bone marrow	+	+	+	+	+	+	+	+	+	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	
Lymph node	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lymph node, bronchial	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	M	+	+	+	+	+	+	
Lymph node, mandibular	+	+	+	A	+	+	+	+	+	+	I	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lymph node, mediastinal	I	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lymph node, mesenteric	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Spleen	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Thymus	I	+	+	+	+	+	+	+	+	M	+	M	+	+	+	+	+	M	+	+	+	+	+	+	+	
Integumentary System																										
Mammary gland	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Skin	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Basosquamous tumor malignant																										
Fibrous histiocytoma																										
Keratoacanthoma																										
Musculoskeletal System																										
Bone	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Vertebra, osteosarcoma	X																									

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TABLE A2

Individual Animal Tumor Pathology of Male Rats in the Lifetime Inhalation Study of Talc: 18 mg/m<sup>3</sup> (continued)

	2	4	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7		
Number of Days on Study	4	9	0	9	0	0	1	1	1	1	2	3	4	5	5	5	7	8	9	9	0	0	1	2	3	
	8	2	0	4	7	9	4	5	5	7	8	4	5	1	1	3	6	3	7	8	1	5	9	2	7	
	2	1	2	1	2	1	1	1	2	2	1	2	2	2	2	2	2	1	1	2	1	2	1	1	1	
Carcass ID Number	1	4	0	7	4	7	7	4	2	6	9	1	5	0	2	6	7	2	7	5	2	5	5	5	7	
	9	5	3	7	4	4	5	9	4	6	5	7	1	2	7	7	0	6	6	2	5	1	2	0	2	
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Nervous System																										
Brain	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Spinal cord	+																									
Respiratory System																										
Larynx	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lung	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Alveolar/bronchiolar adenoma																										
Alveolar/bronchiolar carcinoma, multiple																										
Osteosarcoma, metastatic, uncertain primary site																										
Nose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Trachea	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Special Senses System																										
Eye																										
Urinary System																										
Kidney	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Ureter																										
Urethra																										
Urinary bladder	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Systemic Lesions																										
Multiple organs	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Leukemia mononuclear	X				X	X	X	X	X	X				X	X	X	X		X		X		X			
Mesothelioma malignant																										

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## Lesions in Male Rats

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**TABLE A2**  
**Individual Animal Tumor Pathology of Male Rats in the Lifetime Inhalation Study of Talc: 18 mg/m<sup>3</sup> (continued)**

Number of Days on Study	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8	
	4 7 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 0 0 0 0 0 0 0	
	3 8 3 8 1 1 3 4 8 9 9 9 9 9 9 9 9 0 0 0 0 0 0 0	
Carcass ID Number	2 2 2 1 2 2 2 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2	Total Tissues/ Tumors
	2 0 4 9 4 7 7 9 4 5 5 6 7 8 9 9 9 2 2 4 4 4 6 7 7	
	2 1 2 4 5 4 1 7 6 5 6 9 8 0 3 6 8 0 8 3 6 7 8 5 6	
	1 1	
<b>Nervous System</b>		
Brain	+ +	50
Spinal cord		1
<b>Respiratory System</b>		
Larynx	+ A +	49
Lung	+ +	50
Alveolar/bronchiolar adenoma		1
Alveolar/bronchiolar carcinoma, multiple	X	
Osteosarcoma, metastatic, uncertain primary site	X	1
Nose	A + + + + A A + + + + + + + + + + + + + + +	1
Trachea	A A +	47
	A A +	48
<b>Special Senses System</b>		
Eye		2
<b>Urinary System</b>		
Kidney	A A +	48
Ureter		1
Urethra		1
Urinary bladder	A A +	47
<b>Systemic Lesions</b>		
Multiple organs	+ +	50
Leukemia mononuclear	X X X	23
Mesothelioma malignant	X	1

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**TABLE A3**  
**Statistical Analysis of Primary Neoplasms in Male Rats in the Lifetime Inhalation Study of Talc**

	0 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	18 mg/m <sup>3</sup>
<b>Adrenal Medulla: Benign Pheochromocytoma</b>			
Overall rates <sup>a</sup>	25/49 (51%)	30/48 (63%)	36/47 (77%)
Adjusted rates <sup>b</sup>	87.6%	90.2%	100.0%
Terminal rates <sup>c</sup>	6/9 (67%)	11/14 (79%)	16/16 (100%)
First incidence (days)	429	558	614
Life table tests <sup>d</sup>	P=0.434	P=0.515N	P=0.499
Logistic regression tests <sup>d</sup>	P=0.007	P=0.213	P=0.009
Cochran-Armitage test <sup>d</sup>	P=0.007		
Fisher exact test <sup>d</sup>		P=0.175	P=0.008
<b>Adrenal Medulla: Malignant Pheochromocytoma</b>			
Overall rates	3/49 (6%)	3/48 (6%)	7/47 (15%)
Adjusted rates	17.2%	15.2%	31.5%
Terminal rates	1/9 (11%)	1/14 (7%)	3/16 (19%)
First incidence (days)	670	544	645
Life table tests	P=0.242	P=0.552N	P=0.376
Logistic regression tests	P=0.096	P=0.662	P=0.178
Cochran-Armitage test	P=0.083		
Fisher exact test		P=0.651	P=0.142
<b>Adrenal Medulla: Benign, Malignant, or Complex Pheochromocytoma</b>			
Overall rates	26/49 (53%)	32/48 (67%)	37/47 (79%)
Adjusted rates	91.7%	93.6%	100.0%
Terminal rates	7/9 (78%)	12/14 (86%)	16/16 (100%)
First incidence (days)	429	544	614
Life table tests	P=0.483	P=0.549N	P=0.539
Logistic regression tests	P=0.007	P=0.147	P=0.006
Cochran-Armitage test	P=0.007		
Fisher exact test		P=0.123	P=0.007
<b>Liver: Hepatocellular Adenoma or Neoplastic Nodule</b>			
Overall rates	2/49 (4%)	2/50 (4%)	4/48 (8%)
Adjusted rates	11.2%	14.3%	14.9%
Terminal rates	0/9 (0%)	2/14 (14%)	1/16 (6%)
First incidence (days)	698	799 (T)	615
Life table tests	P=0.359	P=0.586N	P=0.434
Logistic regression tests	P=0.248	P=0.661N	P=0.333
Cochran-Armitage test	P=0.237		
Fisher exact test		P=0.684N	P=0.329
<b>Pancreatic Islets: Adenoma</b>			
Overall rates	1/47 (2%)	0/41 (0%)	2/43 (5%)
Adjusted rates	12.5%	0.0%	9.9%
Terminal rates	1/8 (13%)	0/13 (0%)	1/13 (8%)
First incidence (days)	799 (T)	- <sup>e</sup>	617
Life table tests	P=0.387	P=0.403N	P=0.612
Logistic regression tests	P=0.308	P=0.403N	P=0.479
Cochran-Armitage test	P=0.304		
Fisher exact test		P=0.534N	P=0.466

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